REQUESTING SERVICE: RADIOLOGY
SHIP TO: CHIEF, AMMS (90D)
V.A. Medical Center
1601 SW ARCHER ROAD
GAINESVILLE, FL 32608-1135

REQUISITION: 573-B85037

Line #	Part #	Description	Qty
1		**AMB. COVE LIGHT CONTROL UNIT**	**1**

Ambient Experience Cove Lighting combines Ambient Experience design strategies and dynamic, LED cove lighting to enhance the clinical space. The solution begins with site-specific recommendations to optimize the clinical area in terms of workflow and storage, including opportunities to minimize clutter for a more soothing environment. These recommendations are incorporated into the standard equipment Site Plans.

Once wall areas within the clinical suite are cleared of most extraneous tools and supplies, dynamic Cove Lighting can work to wash the walls in selectable colors, providing both positive distraction for the patient and an opportunity to personalize an otherwise intimidating environment.

The solid state lighting solution is controlled by an easy-to-operate wall-mounted dial which selects the color of the light and can also set a speed for colors to change.

The Ambient Experience Cove Lighting solution includes:

- Design analysis and recommendations to minimize clutter and improve workflow
- Oversight by specially trained Ambient Experience Project Manager
- Solid-state lighting controller
- Power supply unit
- Instructions for Use

2		**Ambient Cove Lighting Fixtures and mount. material**	**90**

Ambient Cove Lighting Fixtures and mounting material (Feet)

Ambient Lighting Cove part consists of the following:
1 feet
LED light fixtures & related mounting material

Note: this lighting component provides decorative lighting only. It is not intended as, nor replaces' functional lighting.

Line #	Description	Qty
1	**Azurion 7 C20**	**1**

Advanced solution for vascular, non-vascular, embolization to interventional oncology procedures
Key benefits

- Optimized utilization of your lab by procedure based workflow
- Superb image quality to evaluate small details and vessels with clarity.
- Intuitive user interaction delivering an easy to use, easy to learn system

Changing interventions
With our Live Image Guidance we aim to remove barriers to safer, effective and reproducible treatments, delivering clinical value where it's needed most - at the point of patient treatment. Intelligent and intuitive integration of live imaging, patient information, and procedure-based applications optimize real time therapy guidance.

The 7 series C20 ceiling system is designed to enhance all the different procedures your interventional lab faces, from vascular, non-vascular and embolization to interventional oncology procedures. This future proof solution is designed around a single, standardized hardware and software platform that can be upgraded and expanded as new needs arise or requirements change. Its architecture is made to easily integrate with third party applications and devices. A new workflow approach aims to support interventional teams in carrying out procedures for their patients, consistently and efficiently with great ease of use.

The Philips Azurion 7 C20 uses a range of Procedure Cards to help optimize and standardize system set-up for your cases, from routine to mixed procedures.
Procedure Cards can increase the consistency of exams by offering presets (e.g. most-frequently used, default protocols and user-specified settings) on procedure-, physician- or departmental level. In addition, hospital checklists and/or protocols can be uploaded into the Procedure Cards to help safeguard the consistency of interventional procedures and help to minimize preparation errors.
The Philips Azurion 7 C20 interventional X-ray suite has been specifically designed to save time by enabling the interventional team to work on all activities in the exam room - and at one or more work spots in the control room at the same time - without interrupting each other. This leads to higher throughput and faster exam turnover and contributes to quality of care.

To improve dose management, Philips Zero dose positioning enables you to move the stand and table to the region of interest shown on the last clinical image hold before a new acquisition is started, without any radiation.
Specifications
The Philips Azurion series contain a number of features to support a flexible and patient centric procedural workflow.
The Philips Azurion series (within the limits of the used Operating Room table) are intended for use to perform:

- Image guidance in diagnostic, interventional and minimally invasive surgery procedures for the following clinical application areas: vascular, non-vascular, cardiovascular and neuro procedures.

- Cardiac imaging applications including diagnostics, interventional and minimally invasive surgery procedures.

The Philips Azurion 7 C20 system comprises five functional building blocks:

1. Geometry
2. X-ray Generation
3. Image Detection
4. User Interface
5. Viewing

Each functional building block is explained in further detail including accessories.

1. Geometry

A. 7 C20 stand

The Philips Azurion 7 C20 stand is a stable assembly of a C-arm and a ceiling suspended L-arm. The X-ray tube and the flat detector are integrated into the C-arm. This provides a compact assembly completely free from the floor, with maximal positioning flexibility and unrestricted access to the patient. The robust design ensures excellent reproducibility of projections, needed in for example subtracted imaging procedures and advanced 3D imaging. The L-arm can be rotated and moved in longitudinal direction allowing a three-sided patient approach and total body coverage.

- L-arm rotation around the patient table: +90, 0, -90 degrees.
- L-arm longitudinal movement: 300 cm

This movement features auto-stops at the parking position, cardio/neuro position and lower peripheral position.

B. Patient Support

The patient support provides very light manual float movement, even for heavy patients, thanks to the mono-bearing technology. The long flat carbon fiber tabletop provides ample space to place e.g. catheters and endovascular tools. On customer request, the standard table top can be replaced by a table top for neuro procedures. This table top has a smaller width at the head end for better imaging results in neuro procedures.

- Table top length of 319 cm, width 50 cm (neuro table top is 45cm at head end)
- Metal-free cantilever 125 cm
- Floating table-top movement of 120 cm longitudinal and +/- 18 cm transversal
- Motorized height adjustment range is 74 -102 cm cm for a table without swivel nor cradle/tilt.
- Maximum cantilever of 223 cm , for full patient coverage
- Table tilt +17 /-17 degrees (optional)
- Table cradle +15 / -15 degrees (optional)
- Pivot range 270 degrees (-90 to +180 or +90 to -180 degrees), table can be locked at any position and has stops at 0, +/-13, +/- 90 and +/- 180 (optional)
- Table swivel, 78.2 cm longitudinal displacement, motorized (optional).
- Maximum load: 275 kg (up to 250 kg patient weight plus 25kg accessories or 225kg patient weight plus 50kg accessories) plus 500 N for CPR in any longitudinal position of the table top

The UIM modules are not accessories; make consistent with "AD7 accessories Cardiac"
The Philips Azurion system can be fitted with a comprehensive set of accessories to help you perform your procedures as conveniently as possible. Included are

- 1 cerebral filter

- 3 rail accessory clamps
- 1 drip stand
- 1 Set of Elbow Supports
- 1 Set of patient Straps
- 1 Arm Support Board
- 1 Head Support
- 1 Mattress
  The mattress is a slow recovery foam mattress with a density of 58 kg/m3. The mattress has a thickness of 7 cm and adapts to the body shape of the patient. It makes the pressure being divided equally and it recovers when the patient is taken off the mattress. The light yellow cover is easy to clean. Patients are more relaxed due to the comfort of this mattress.

2. X-ray Generation
A. Generator

The 7 C20 system comprises an integrated, micro-processor controlled Certeray generator based on high frequency converter technique. The user interface control of this X-ray Generator is incorporated in the touch screen module, review module, and the on-screen displays. The Certeray generator comprises:

- X-ray generator 100 kW
- Voltage range is 40 - 125 kV
- Maximum current 1000 mA at 100 kV
- Maximum continuous power for fluoroscopy: 1.5 kW

Program selection:

- Pulsed X-ray up to 3.75 , 7.5 , 15 , 30, 60(optional) frames/s for digital dynamic exposures
- Frame rate extension to 30 frames per second.

Designed to enhance visualization of complex and pediatric interventions
Frame rate extension to 30Fr/sec increases the system acquisition speed up to 30 frames per second for cardio studies requiring high speed imaging.
Specifications

The frame rate extension increases the acquisition speed to 15fps and 30fps with a 1024x1024 matrix.

- Pulsed X-ray for pulsed fluoroscopy (3.75 , 7.5 , 15 , 25, 30 frames/s).
- Minimum exposure time of 1 ms
- ECG triggered acquisition: allows acquiring one exposure for each QRS peak with selectable delay time
- Automatic kV and mA control for excellent image quality prior to run to save dose
- X-ray tube load incorporated in the Certeray generator
- Pulsed X-ray for (subtracted) acquisition up to 12 frames/s for vascular applications

B. X-ray tube
The 7 C20 system has the Maximus ROTALIX Ceramic grid switch tube assembly MRC200+ GS 0407 integrated.

The MRC 200+ GS 04 07 tube assembly and cooling unit CU 3101 for cardiovascular systems comprises:

- 0.4/0.7 mm nominal focal spot values maximal 30 and 65 kW short time load
- Grid switching at pulsed fluoroscopy and low load exposure (to eliminate soft radiation and improve image quality)
- Continuous loadability: 3400 W (at 21 degrees C room temperature) / 4000 W (= Max assembly continuous heat dissipation)
- Application of SpectraBeam dose management
- Tube housing is oil cooled with thermal safety switch
- Maximum anode cooling rate of 1820 kHU/min
- Anode heat storage capacity of 6.4 [MHUeff]

C. System intrinsic

- Fully digital imaging chain in maximizing the utilization and technology of the x-ray generator, x-ray tube, flat detector and image processing.
- Customizable EPX protocols to each application according to user preferences for different composition of dose rate, pulse speed, filter setting, and image processing (noise reduction, adaptive contour enhancement, adaptive harmonization)
- Built-in SpectraBeam filtering of low energy radiation to improve image quality and dose efficiency with MRC200+ X-ray tubes.
- Pre-filters of 0.2, 0.5 and 1.0 mm CU equivalent
- Automatic cardiac wedge positioning
- X-ray depth collimator with single semi-transparent wedge filter with manual and automatic positioning.
- Xper Beam Shaping, which means that both shutters and wedges can be positioned on the Last image Hold without the need for X-ray radiation.
- Xper Fluoro Storage, a grab function allows storage and archiving of both a fluoro image or the last 20 seconds of fluoroscopy run. These images or runs can be archived and reviewed as a regular run.

D. User selections

- removable anti-scatter grid to lower x-ray dose for pediatrics (grid ratio 13:1)
- ECG triggered acquisition, offering the possibility to acquire images at the same phase of the heart cycle. This applies to the low dose fluoro and exposure program for EP applications. This allows patient dose reduction by lowering the pulse rate to 1 pulse per heart and let the physician still focus on relevant items
- three programmable fluoroscopy modes can be selected from the control module. Each mode has a different composition of dose rate, pulse speed, filter setting, and image processing (noise reduction, adaptive contour enhancement, and adaptive harmonization)

Roadmap Pro can be selected from the control module.
In the first Roadmap phase a vessel map is created by live fluoroscopy or by selecting an exposure image (SmartMask) with a vessel map which, in the second Roadmap phase, is superimposed with subtracted live fluoroscopy.

Roadmap Pro features Smart Settings in special clinical modes that are optimized to visualize special materials such as coils and glue.

- Acquisition runs can be done without losing the vessel map of Roadmap Pro.
- Live processing of the vessel map, the device map and the landmark map can be done on the touch screen module.
- Field of View (FoV) can be altered during the second phase.
- Xres for vascular procedures is standard part of Roadmap Pro.

In Roadmap Pro "Automatic Motion Compensation" (AMC) is added to the roadmap functionality. During roadmap, small movements of the patient can lead to subtraction artifacts. These artifacts might conceal important clinical information. "Automatic Motion Compensation" compensates for rigid, uniform (skeletal/table) translations and is therefore very effective in interventional (neurology) applications where subtraction imaging is applied. Disclaimer: AMC only corrects movement artifacts in 2 dimensions. 3 dimensional movements like swallowing or rotation of the head cannot be corrected.

E. User dose awareness

DoseWise program: Philips DoseWise program is a set of techniques, programs and practices built into the X-ray system that ensures excellent image quality during each interventional application, while at the same time reducing x-ray dose at every opportunity. The DoseWise comprises of three building blocks to help reduce x-ray dose without compromising diagnostic quality: system intrinsic, user selection and awareness.

On-system monitor display provides and displays body zone specific Air Kerma data (10 zones for cardiac applications) in numeric and graphical bars.

- Graph displays the accumulated Air Kerma dose for the particular body zone of the actual projection
- When the accumulated Air Kerma dose of the particular body zone reaches the critical skin dose level of 2 Gy, it will be indicated on the display and made visible to the x-ray operator.

Radiation Dose Structured Report
Collection of dose relevant parameters and settings and export to a DICOM database (e.g. PACS) (dose information is sent in MPPS message not as Radiation Dose Structure report), according IEC60601-2-43, 2nd Edition. The reported data can be used for, for example:

- Quality improvement: evaluating trends in X-ray dose performance per facility, system and operator. RDSR enables analysis of average dose levels & variance for routinely performed exams and procedures. Also, typical system usage can be extracted from the data, helping to identify root causes behind deviations and measures to improve.
- Analysis of individual patient cases: using dose levels and system usage per procedure
- Alerting for high dose cases, timely identifying patients at risk or deterministic effects, for proper follow-up.

Secondary Capture Dose Report
The Secondary Capture Dose Report function allows the user to save & transfer, manually or automatically, a patient Dose Report to PACS in DICOM secondary capture format.
The dose report will be stored in the related patient image folder.

3. Image Detection

The system has a 20 inch flat panel image detector. This detector can be rotated over 90 degrees from portrait to landscape and vice versa.

The image chain with the 20 inch flat panel image detector comprises the following:

- A 30 cm by 40 cm (20 in.) diagonal 8 mode Dynamic Flat Detector subsystem for fluoroscopy and cine-fluorography.
- 8 modes 30*38/30*30/26*26/22*22/19*19/16*16/13.5*13.5/11*11 cm, Dynamic Flat Detector
- The outer detector physical housing is 36 x 47.2 cm
- The digital output of the Flat detector is 1904*2586 pixels at 16 bit depth.
- The pixel pitch is 154 micron by 154 micron
- The DQE(0) is >77% providing high conversion of X-ray into a digital image, while maintaining a high MTF.

Philips Azurion offers a storage capacity of (optionally extendable) of 50,000 images at matrix size of 1024 x 1024, in 8 or 10 bit depth. With a matrix size of 2048 x 2048 this is 12,500 images. Maximum number of examinations is 999, with no limit to the maximum number of images per examination.

Xres is a multi-resolution spatial temporal noise reduction and edge enhancement filter for interventional applications. Xres exploits the full benefits of dynamic digital flat detector imaging to enhance sharpness and contrast and has been designed to reduce noise in fluoroscopy and exposure runs. The settings for Xres Cardio can be customized to improve image quality. Xres is a Philips unique image processing algorithm developed at Philips Research for medical applications. Xres is us ed with Philips MR and US scanners next to Philips Azurion systems.

4. User Interface
User Interface in Examination Room
The User Interface comprises a variety of User Interface modules in the Examination Room. There is the On-Screen Display, the touch screen module, Viewpad and the control modules.
The On-Screen Display is positioned on the left side of the live/ref monitor. The following system information is displayed:

- X-ray indicator
- X-ray tube temperature condition
- Gantry position in rotation and angulation
- Source Image Distance
- Table height
- Table top tilt and cradle angle, if applicable
- Detector field size display
- General System messages
- Selected Frame speed
- Fluoroscopy mode
- Integrated fluoroscopy time
- Skin Dose: dose rate during X-ray, cumulated dose when no X-ray
- Dose Area Product: dose rate during X-ray, cumulated dose when no X-ray
- Graphical bars for Body Zone specific dose-rate and accumulated skin dose levels, related to the 2 Gy level (for cardiac applications
- Stopwatch

The pan handle is an extension of the control possibilities for floating movements of the table top in cardio vascular and neuro systems

Key benefits

- Flexible positioning during cardio and neuro procedures
- Flexible positioning during cardio and neuro procedures

To allow more flexible positioning during cardio and neuro procedures, the pan handle option can be used to perform floating table movements. The pan handle provides a solid grip of the tabletop and can release and apply the tabletop brakes. It can be attached anywhere along the tabletop and accessory rails without affecting the floating range.
Specifications

Pan handle with cable and connector
Table-top attachment clamp
Accessory-rail attachment clamp
Touch screen module

The touch screen module is provided for use at either the tableside or in the control room. Optionally, it is possible to connect in parallel up to three touch screen modules on the system. The touch screen module has a touch screen, which can be operated when covered with sterile covers. The touch screen module allows control of (depending on configuration):

- 3rd party equipment (e.g. CX50, Interventional Tools, EchoNavigator, DoseAware)
- Monitor layout (FlexVision, switchable viewing)
- X-Ray settings (Collimation, Projections, Table, Series and Processing)
- Quantitative Analysis (optional) User can only start QA from the touch screen module. No controls like coronary analysis, left ventricular and vessel analysis can be performed on the touch screen module.
  - Operation of Xcelera, XperIM and IntelliSpace Portal viewing (optional)
- Operation of CX50 Ultrasound (optional)

2nd Touch Screen Module

Key Benefits

- Control system operations with a second touch screen module

Tablet-like touch screen control
During an intervention flexible control of applications and system operations can support fast decisions and communication with team members. The touch screen module provides fast, tablet-like touch response to control system operations. Up to three touch screen modules can be connected to the X-ray system: on the table, on the pedestal and in the control room.
Specifications

The second touch screen module is similar to the standard touch screen module and provides touch screen control of displayed functionality. The following functions can be made available providing the relevant commercial options have been selected:

- Acquisition settings
- Image processing controls
- Channel selection for MultiVision
- Automatic position control (optional)
- Quantitative Analysis controls (optional)
- Xcelera and IntelliSpace Portal viewing (optional)
- Interventional tool controls (optional)
- 3D-RA, Dynamic 3D Roadmap (optional)
- StentBoost, 3D-CA (optional)
- XperCT, XperGuide (optional)
- XIM physio monitoring controls (optional)

Connectivity:

A maximum of 3 touch screen modules can be connected to the X-ray system:

- One touch screen module on the table
- One touch screen module in the Control Room
- One touch screen module on the pedestal

Viewpad
The Viewpad contains the preprogrammed function settings. The system is provided with two Viewpads. The following functions are provided:

- Run and image selection
- File and run cycle
- File overview
- Store to Reference image file
- Copy image to photo file
- Digital (fixed) zoom and panning
- Recall reference images, which means switching control of Viewpad function from life to reference monitor
- Laser pointer, intended to point at regions of interest on the image monitors
- LED indication of laser pointer on/off and battery low
- Subtraction on/off
- Remasking
- Landmarking
- Access flat detector rotation

User Interface in Control Room
The control room comprises a review module, data color monitor and review monitor. The data and review functions are controlled by a single keyboard and mouse. The review module offers the basic functions for review. The most prominent functions can be controlled by the push of a button. The review module comprises the following functionality:

- Power on/off
- File and run cycle
- File, Run, and Image stepping

- Run and file overview
- Reset fluoroscopy timer
- Enable/disable X-ray
- Geo disable

Acquisition monitor. A standard keyboard and mouse control the user interface. The acquisition monitor is intended to follow live case in the ER. System information is displayed on the bottom of the monitor:

- Stopwatch and Time
- System guidance information
- Dose Area Product (DAP) and Skin Dose, as dose rate during X-ray and cumulative dose at no X-ray
- Frame speed settings, fluoroscopy mode, and accumulated Fluoroscopy time
- Exposure and fluoroscopy settings as Voltage (kV), Current (mA) and time (ms)
- Geometry information as rotation, angulation, and SID

The acquisition monitor is designed for standard workflow based on scheduling, preparation, acquisition, review, report, and archive.

Scheduling
In the scheduling page it is possible to add new patients (either querying from RIS/CIS or by creating patient locally). The patients can be listed and selected per date, physician, and intervention type. Previous DICOM patient studies can be uploaded with the DICOM Query Retrieve function in the Philips Azurion system. Patient management protocols are flexible and allow
for multiple studies to be selected under one patient identification number. This means that new studies can be appended to an earlier patient file. Furthermore, each study can contain multiple examinations to allow for split administrative purposes. Each examination contains multiple files, like acquisition file, reference file, and QA results file.

Procedure Cards
Procedure Cards provide the information of room and patient preparation for each individual physician. Procedure Cards are customizable per setting and allow each physician to provide their own room protocols. Procedure Cards is intended to make hard copies of the protocol instructions redundant.

Acquisition
The acquisition page contains information on the currently selected patient.

Reviewing
The review page allows for reviewing of patients:

- Previous examination cases
- Review of other DICOM XA or DICOM SC studies.

Quantitative Vascular Analysis

Key benefits

- Allows quantitative assessment of different size vessels such as aortic and peripheral
- Aids confident decision making for device selection, approach angles and follow-up
- Designed for efficiency with single click functions and fast results

Easily obtain objective assessment of aortic and peripheral vasculature to support decision making and allow quantitative assessment of vasculature during vascular interventions, the 2D quantitative vascular analysis option supports quantification such as aortic and peripheral artery dimensions of about 5 to 50 mm from 2D angiographic images. With one click, the relevant segment is detected and a visualization of the obstruction, healthy vessel, reference diameter, stenosis diameter and plaque area is created.

Specifications:

- Automated vessel segmentation
- Diameter measurement along selected segment
- Automated obstruction analysis
- Stenosis diameter, stenosis length
- % stenosis diameter, % stenosis area
- Automated and manual calibration routines
- Store result page

Analysis of the targeted vessel segment has been simplified with the single click function. Position the mouse on or close to the stenotic area and click once to detect the relevant segment. The visualization shows the obstruction, healthy vessel, reference diameter, stenosis diameter and plaque area.

Archiving

Clinical studies can be archived to a CD/DVD, USB or a PACS. The archive process can be completely automated and customized with settings. Parameters like multiple destinations, archive formats can be selected to the individual needs and wishes for programming under the settings.

With Philips Azurion the control room comprises of an acquisition monitor and a review monitor. The review monitor is a 24 inch color TFT-LCD medical grade monitor. The Graphical User Interface on the Review monitor has the following features and possibilities:

- Step through file, run, or images
- File, and run overview
- Contrast, brightness, and edge enhancement settings
- Flagging of runs or images for transfer
- Applying text annotation in images
- DICOM printing if available
- Executing Quantitative Analysis Packages if available
- Subtraction functionality if available

This system is delivered with printed instructions for use and/or electronic instructions for use, as well as a quick start leaflet. A printed paper instructions for use can also be ordered at no additional cost.

5. Viewing

A. Viewing in Examination room

Line #	Description	Qty

Philips Azurion systems come with one 27 inch high brightness color medical grade LCD monitor for clinical image display in the Examination room. This LCD monitor is intended for viewing in the examination room and is designed for medical applications. The monitors is used for combined viewing of live images and reference display. Selection and storing of live to reference monitor is controlled by the infra-red remote-control viewpad or via touch screen module.

The On-Screen Display provides status information on stand rotation-angulation, table height, display of system messages, X-ray tube load status, selected fluoroscopy mode, selected detector Field of View, and both the rate and accumulation of the dose area product and Air Kerma dose. The main characteristics are:

- 27 inch high brightness color TFT-LCD display
- Native format 1920x1080 Full HD
- 10 bit gray-scale resolution with gray-scale correction
- Wide viewing angle (approx. 178 degrees)
- High brightness (max 650 Cd/m2, default 400 Cd/m2)
- Long term luminance stability through backlight stabilization circuit
- Automatic brightness control with backlight sensor
- Control functions on side
- User programmable and standard reference setting
- On-Screen Display
- Internal selectable lookup table for gray-scale transfer function, including DICOM
- Internal power supply (100-240 VAC)
- Integrated LCD protection screen

If applicable included is a flat monitor ceiling suspension for 2 monitors (2F MCS). MCS includes motorized height adjustment. The ceiling suspension allows flexible monitor positioning over a range of about 360 x 300 cm. At customer request, this 2 monitor MCS can be replaced by a 4 or 6 fold MCS or an MCS integration kit HD for non-Philips MCS. The MCS integration kit HD contains vital parts for system operation.

B. Viewing in Control room

Philips Azurion includes two 24 inch high brightness color LCD monitors. The color monitors are for acquisition and reviewing display.

The main characteristics for color monitor are:

- 24 inch color TFT-LCD display
- Native format 1920x1080 Full HD
- High brightness (max 400 Cd/m2, default 350 Cd/m2)
- Wide viewing angle (approx. 178 degrees)
- Long term luminance stability through backlight stabilization circuit
- Automatic brightness control with backlight sensor
- Control functions on side
- User programmable and standard reference setting
- On-Screen Display
- Internal selectable lookup table for gray-scale transfer function, including DICOM
- Internal power supply (100-240 VAC)Integrated USB hub

A Philips Azurion system includes the DICOM Image Interface which enables the export of clinical images to a DICOM destination like a CD-Medical station or a PACS server. The export formats are based on DICOM 3.0 protocols. The system exports clinical studies in Cardiac DICOM XA Multi-Frame or DICOM Secondary Capture formats.

The DICOM Image Interface transfers through its fast Ethernet link, making images available on-line within seconds. The archive process can be configured by X-ray settings. The images are sent out either in the background, or manually upon completion of the examination. The export format is configurable in 512x512 or 1024x1024 matrix in 8 or 12 bit depth. The examination can be sent to multiple destinations for archiving and reviewing purposes. The DICOM Image Interface provides DICOM Storage and DICOM Storage Commitment Services. The DICOM Query/Retrieve function allows older DICOM XA MF and DICOM SC studies to be uploaded in the system. Furthermore, additional information can be appended to a study while keeping the patient identification the same.

Remote Intercom for the Azurion System. The option includes a separate intercom, which is connected independently from the system. This allows placement of the intercom at the preferred working position in the control room and examination room. The listen function can be separately selected on each intercom. Activating the talk function on a selected intercom automatically disables this function on the other intercom.

Uninterruptable Power System (UPS)

Ensures data integrity

A power failure of the hospital mains during an intervention can cause loss of data. If this occurs, the single phase Uninterruptable Power System (UPS) enables a proper shut-down of the X-ray system processor units.

Specifications

In case a full three phase UPS is selected, the single phase UPS is not delivered.

Remote service
Access to the system from a Remote location is possible via network or modem connection. Remote access to a system can shorten the time needed for e.g. changing system settings or problem diagnosis.

Environmental
At Philips Healthcare, we feel the responsibility towards society and the environment. The latest 7 C20 system is a perfect example of our EcoVision program. Bye xamining every aspect of the 7 C20 design and development through a green eye, we drastically reduced the products environmental impact.

System & table APC

Helps to save time and manage X-ray dose with automatic positioning

Positioning the X-ray system to visualize relevant anatomy from different perspectives can involve a great deal of time and many scout images during interventional procedures. To help save time and manage X-ray dose while working, the Automatic Position Controller (APC) provides an easy way for interventional team members to store and recall stand-related positions.

Specifications

The system APC stand and table positions need to be stored and recalled separately.

Clinical Education Program for Azurion System:

The purchase of the Azurion System includes a StartRight entitlement pool that allows for the customized delivery of educational events to improve staff time to proficiency, knowledge on system features, and improve overall lab efficiency. For new users, the recommended series of educational events includes:

Essentials OffSite Education: Philips will provide up to two (2) Cardiovascular Technologists, Registered Technologists, Registered Nurses, or other system operator as selected by customer, with in-depth didactic, tutorial, and hands-on training covering basic functionality and work-flow of the cardiovascular imaging system. In order to provide trainees with the ability to apply all fundamental functioning on their system, and to achieve maximum effectiveness, this class should be attended no earlier than two weeks prior to system installation. This twenty-eight (28) hour class is located in Cleveland, Ohio, and is scheduled based on your equipment configuration and availability. Due to program updates, the number of class hours is subject to change without notice. Customer will be notified of current, total class hours at the time of registration. This class is a prerequisite to your equipment handover OnSite Education. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. In the event that an EP Navigator workstation has also been ordered, the offsite training course will be tailored to focus on the electrophysiology functionality of the FD system and the EPN workstation. Travel and lodging are not included, but may be purchased through Philips. It is highly recommended that 989801292102 (CV Full Travel Pkg OffSite) is purchased with all OffSite courses

Initial Handover OnSite Education: The primary Philips Education Specialists will provide twenty-eight (28) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. Students should attend all 28 hours, and must include the two OffSite education attendees. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation. It is highly recommended for systems that are fully loaded or for customers with a large number of staff members to also purchase 989801292099 (CV Add OnSite Clin Educ 24h).

FollowUp OnSite Education: Philips Education Specialists will provide sixteen (16) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. Students should attend all 16 hours, and must include the two OffSite education attendees. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

Assessment OnSite Year 1: The primary Philips Education Specialist will perform a two day onsite assessment at the customer site on or close to the first anniversary of the Initial Handover. The Specialist will assess through various means not limited to; physical observation of procedure workflow, tool usage data analysis and staff interviews. The Specialist will then review findings with department head and make recommendations thereof. The Specialist may perform refresher training if required.

Education expires one (1) year from installation date (or purchase date if sold separately). Ref#296339296340296341296342-20170209

2   **Azurion FlexVision11 Input**   **1**

Nine Isolated Wall Connection box to support the display of an external video source on a monitor in the examination room.

Key benefits
- Stream video from other modalities on the interventional X-ray suite:
- Connect external video in the exam room

Easily stream video to other locations

Many interventional facilities use video to record and stream images from other modalities on the interventional X-ray suite for training or presentation purposes. The Video Wall Connection Box facilitates connection of the video source via a standard DVI cable/connector and lossless transfer of the video signal over the approximate 30 meter long cable. It can be mounted in the examination room or in the control room, depending on the location of the video source.

Specifications

The quantity of the VWCB's has to be calculated as follows:

For each video signal via MultiVision: 1 VWCB (max = 4)

For each video signal to FlexVision XL on Cardio System: 1 VWCB (max = 9)

For each video signal to FlexVision XL on Vascular System: 1 VWCB (max = 8)

For each 3rd party video signal directly connected to an LCD in the MCS: 1x VWCB

Note:

No VWCB is required in case a video signal is connected directly to a dedicated LCD from the following sources:
1. Live/ref Slaving
2. Interventional HW (XtraVision), IntelliSpace Portal, Philips Xcelera (only if workstations are powered by Philips X-ray system)
3. XperIM

Two Isolated Wall Connection box on the rear side of the monitor ceiling suspension to support the display of an external video source on a monitor in the examination room.

Key benefits
- Easily connect external video in the exam room

Specifications

A wall connection box to connect external video (input only), USB and Ethernet. One or two WCB's (option) can be attached on the rear side of the 1st MCS with a bracket. A cable box (also attached to rear side of 1st MCS) can be used to store connected equipment cables. A maximum of two WCBs/cable boxes can be attached.

3   **Ratchet compressor**   **1**

Line #	Description	Qty

• Decrease motion artifacts on images

Decrease motion artifacts on images
Patient movement can cause motion artifacts in images. The ratchet compressor is used to immobilize the patient on the table and thereby decrease motion artifacts on images. It can be easily attached to the side of the table. The ratchet winding mechanism is attached to one side of the table. The quick release lever lets you easily pass the compression band over the patient and under the table for symmetrical compression.

4	**height-adjustable arm support**	**1**

• Enhance patient comfort during catheter usage
Enhance patient comfort during catheter usage
To support the patient's arm when a catheter is used for brachial catheterization and digital imaging techniques, the arm support can be attached to the tabletop. The support is made of X-ray transparent material and includes a mattress pad for increased patient comfort. The fixation clamp and pivot mechanism are not made of X-ray transparent material.

5	**Addl sets of documentation**	**1**

 Set of black and white copies of all documents, comprising (if applicable):
- User manuals
- Service manuals
- System manuals
- Test results

6	**live/ref slaving for ER**	**3**

Live/ref slaving for Exam Room.

Key benefits
• Easily display any data or clinical information needed to work efficiently
Simplify workflow with flexible viewing control
Having patient data and clinical information easily available on screen can enhance decision making and efficiency during interventions. The live/ref slaving will enable the option to slave the Live and Ref video source from the X-ray system. The total amount of live/ref slaving that can be selected is max 5, minus the number of FCV0807 Live/ref slaving for CR.

Specifications
Live/ref slaving for ER is possible:
- On Philips MCS (additional monitor excluded from this option)
- In combination with FCV0519 1 or 2 MCS from Skytron/Steris

7	**Addl LCD Control Room**	**1**

Additional 24 inch high brightness color LCD monitor.

Key benefits
• Enhance visibility for a variety of procedures

Get a wider view of the situation
Mix and match the widescreen monitors to make efficient use of your lab space. Each monitor can be connected to different sources so you can see just what you need for different phases and types of procedures. The high definition color widescreen monitors enhance the visibility of fine details and vital signs.

Line #	Description	Qty

Specifications
The main characteristics for the color monitor are:
- 24 inch color TFT-LCD display
- Native format 1920x1080 Full HD
- High brightness (max 400 Cd/m2, default 350 Cd/m2)
- Wide viewing angle (approx. 178 degrees)
- Long term luminance stability through backlight stabilization circuit
- Automatic brightness control with backlight sensor
- Control functions on side
- User programmable and standard reference setting
- On Screen Display
- Internal selectable lookup table for gray-scale transfer function, including DICOM
- Internal power supply (100-240 VAC)
- Integrated USB hub

8   **CABLE CARRIER CS**   **1**

Additional carrier for suspension of cable hose from X-ray tube assembly or TV monitor.

9   **ClarityIQ.**   **1**

Significantly lower dose- across clinical areas, patients and operators.

Key benefits
• High-quality imaging at low dose levels
• Enhanced work environment for staff through active management of scatter radiation
• Expands treatment options – enables longer procedures to treat obese and high-risk patients with confidence

See with confidence every time
Interventions are becoming increasingly complex, which lengthens fluoroscopy time and increases the need for high resolution imaging. New devices can be more difficult to visualize, making it harder to position them precisely. The prevalence of patients with a high BMI can also require increased dose levels to visualize anatomy. All of these factors inspired us to completely redefine the balance in interventional X-ray with AlluraClarity.

AlluraClarity with its unique ClarityIQ technology gives you exceptional live image guidance during treatment. What's more, you can confidently manage low X-ray dose levels without changing your way of working. In short, you can see what you have to regardless of patient size.

Specifications
ClarityIQ technology is the foundation of Philips X-ray systems with AlluraClarity. It offers:
- Noise and artefact reduction, also on moving structures and objects
- Image enhancement and edge sharpening
- Automatic real-time patient and table motion correction on live images
- A flexible digital imaging pipeline from tube to display that is tailored for each application area
- Over 500 clinically fine-tuned system parameters making it possible to filter out more X-ray radiation and use smaller focal spot sizes and shorter pulses with the grid switching technology of Philips MRC tube and accompanying generator

10   **MultiSwitch.**   **1**

Line #	Description	Qty

MultiSwitch/Xper Window Switch

MultiSwitch is an option that provides the ability to share the Xper workspot in the Control Room with other applications that are loaded on separate PC modalities.

The MultiSwitch option allows switching of the (colour LCD) data monitor, keyboard and mouse, normally connected to the Allura Xper system, to a separate PC modality.

Thus saving significant space in the control room as only one monitor and keyboard is used for multiple applications.

Applications that are loaded on this PC modality, will run independantly of the Allura Xper system, operated from the Xper workspot in the control room. Obvious example PC applications from PMS are Xcelera, Xcelera CLM, 3D RA, StentBoost, Viewforum.

In addition to the Allura Xper system, up to three separate PC modalities can be connected to MultiSwitch. If these PC modalities are also connected to an Ethernet Network, the ethernet connection will also be switched by MultiSwitch.

The requirements of the PC modality that is connected to MultiSwitch,and the applicable applications are:

- maximum resolution for the colour LCD display: 1280*1024 VGA
- PS/2 keyboard- and mouse interface
- complies with UL60950 regulations and EMC level A

The maximum power supply requirement for three PC modalities (incl accessoiries) in total should not exceed 1400 Watts@230 VAC.

The MultiSwitch option comprises:

- KVM Switch box (4 inputs, 1 output)
- Ethernet switch (3 inputs, one output)
- 5 ea cable sets for keyboard, mouse and VGA
- 3 ea power cables for the PC modalities and one power cable for the ethernet switch
- 4 ea ethernet cables

The Xper Window Switch is an option that provides the ability to integrate networked functionality in the Control Room of the Allura Xper Flat Detector system. The Xper window switch provides the possibility to switch to CIS/RIS applications that are available on the network and are basically data-only oriented.

Xper Window Switch to any RIS/CIS

The Control Room workspot can be switched to the hospitals' Cardiology/Radiology Information System. Only the user-interface devices Data Monitor, Keyboard, and mouse are switched via standard available solutions: "X-window", and "HTML browser" to become a standard UI for the RIS/CIS system.

This option is a software key which enables the specific Xper switch functionality for only the applications, which are available on site.

Compatible with:
- . Allura Xper FD10 R.3
- . Allura Xper FD10/10 R.2

11   **Prep table for Table Mount inj**   **1**

This is only applicable when the Mark 7 Arterion Table Mount injector will be ordered locally. Prepared for Table Mount Injector prepares the XperTable with the cabling needed for a Table Mount install of the MEDRAD Mark 7 Arterion injector head. This preparation will facilitate the install of the Table Mount injector system. It will save an estimated 4 - 8 hours of installation time. The injector base unit can be placed in the technical room, and User Interface and display can be placed in the control room or on the wall of the exam room.

The prepared for Table mount injection table option cannot be purchased in combination with the Swivel AND prepared for Volcano Core option.

12   **Subtracted Bolus Chase**   **1**

For visualization of vessel structures when the blood flow is difficult to estimate, in particular in the lower peripherals.

Bolus Chase solves the problem of cumbersome step movements, the mismatch between blood flow and selected program, and lack of real-time image information.

During digital acquisition in non-subtracted mode with uninterrupted real-time image display, the contrast bolus is followed (chased) interactively by a motorized table scan movement using a hand-hold speedcontroller to adapt the speed of the table scan to the contrast flow.The framespeed can be adapted as well.

The bolus run is followed with a mask run while using the same speedcurve and framespeed as generated during the bolus run. Viewing is possible in the subtracted and non-subtracted mode. If subtracted viewing is not required, the mask run can be skipped.

Subtracted Bolus Chase gives fast, accurate results for increased patient throughput and improved patient management. Automated exposure control and precise speed control assure a high quality images and excellent subtraction studies.

Comprising:

- automatic exposure control
- tabletop motordrive and hand-held speed controller (tableside)
- technique selection using Xper module, available both tableside and in control room (Xper FD20, FD20/10)

13   **VesselNavigation Complete**   **1**

Line #	Description	Qty

VesselNavigation Complete

VesselNavigation Complete provides a package solution for Live Image Guidance for endovascular procedures allowing to plan, perform and follow-up procedures with confidence. Live Image Guidance is based on the 3D overlay of the vasculature on the 2D fluoro images. Next to Vessel Navigator's functionality to overlay a previous acquired CTA or MRA volume on the live image, this package allows you to create an overlay with a 3D contrast enhanced angiography volume (3D Roadmap).

VesselNavigation Complete consists of VesselNavigator, 3D-RA, 3D-RA on Xper Module and 3D-Roadmap.

VesselNavigator

Reduce your need for contrast in complex endovascular procedures

VesselNavigator allows reuse of 3D vascular anatomical information from existing CTA and MRA datasets as a 3D roadmap overlay on live X-ray images. With its sophisticated visualization, it provides an intuitive and continuous 3D roadmap to guide you through vasculature during the entire procedure. This reduces the need for a contrast enhanced run to create a conventional roadmap and potentially shortens procedure times.

The essential components of VesselNavigator are:

- 3D roadmap navigation with a personalized visualization of a CT or MR overlay of the selected vasculature on live fluoro.
- Both 2D and 3D registration for CT or MR image fusion, allowing to choose the optimal registration method for the user's workflow
- Easy, intuitive four step workflow, with one click vessel segmentation
- Ring markers to easily indicate the ostia and landing zones.

VesselNavigator can be used for any type of endovascular procedure, except for coronaries and intracranial vessels. It is especially beneficial for complex and tortuous vasculature where it is challenging to accurately navigate and place stents or for procedures where contrast use should be minimized.

VesselNavigator provides the following functions:

One click vessel segmentation; the user can select the relevant vessels for the overlay in the CT or MR volume in one click

3D landmarks. In the planning step the user can place ring markers for denoting ostia or landing zones and markers for denoting specific structures like calcifications

Plan angles; VesselNavigator provides three dimensional views of vasculature that allow you to easily define the right projection angle. These angles can be recalled during the procedure for optimal navigation and stent placement.

2D registration; The CT or MR volume needs to be matched with the X-ray image for continuous live overlay. This can be performed with 2 X-ray images from different orientations. Once the 2 images are acquired, the user must manually match the bones on the preoperative scan with the X-ray image.

3D registration; The existing CTA or MRA volume needs to be matched with the X-ray image for continuous live overlay. This can be performed with a rotational angiogram or cone beam CT. The user has to identify 3 identical anatomical points on the rotational scan and the CTA or MRA volume. The software automatically matches the identified points to register the pre-operative scan with the X-ray system.

Live image guidance; Real-time overlay of the 3D Vessel segmentation on the live 2D X-ray images from the Allura X-ray system of the same anatomy. For optimal viewing, the user can personalize the visualization of the overlay. The overlay can provide additional 3D image guidance to help the user with navigating the device/catheter to the target, enhancing clinical outcomes.

Table tracking; The overlay will be aligned with the live X-ray image, irrespective of table and system movements.

Table side control; Registration and live guidance can be controlled from table-side to provide efficient work-flow during the interventional procedures

Image data for VesselNavigator is stored together with the VesselNavigator movies and snapshots and can be sent to any optional DICOM compatible device (e.g. PACS/IntelliSpace Portal/Xcelera). Supported are DICOM XA, DICOM SC, DICOM CT, DICOM MR and DICOM XA and any PC in a standard PC compatible format (JPEG,AVI). All this data can be reviewed at any time.

VesselNavigator movies and snapshots can be stored/archived on:

- A PACS systems as DICOM Secondary Capture images or movies.
- USB removable memory device.
- One or multiple DVD's, CD-ROM(s) for easy archiving.
- Hard copy via the (DICOM Print) protocol.

3D-RA

Allura 3D-RA assists physicians in decision making for treatment strategy in endovascular procedures, neuro or vascular surgery or even radiotherapy.
Allura 3D-RA reduces the number of DSA acquisitions and fluoroscopy time needed to perform an examination. This means less X-Ray dose for the patient and the medical staff and a reduced quantity of dye, leading to reduced procedure costs.
Allura 3D-RA provides a unique assessment after treatment due to the use of non-subtracted images that allows to shows devices stents, coils, clips and provide the optimal stand projection for endovascular treatment.
Allura 3D-RA provides a wide range of communication facilities to export 3D images.

1 Image Acquisition
Image acquisition is performed with the Rotational Angiography feature of the Allura Xper FD series with the flexibility to position the C-arm in either head or side position.
C-arm in Head position: the Rotational Angiography run is performed over a scan range of 240 degrees with a rotation speed up to 55 degrees/sec.
C-arm in Side position: the Rotational Angiography run is performed over a scan range of 180 degrees with a rotation speed up to 30 degrees/sec.

2 3D Vessel Reconstruction

The rotational run is automatically transferred and displayed as a 3D vessel model: with the Real-Time digital link (option) 120 images are reconstructed into a 3 dimensional model within seconds. Additional reconstructions, using the Reconstructive Zooming Technique, can be performed as well.

3 Workflow:

Allura 3D-RA in combination with the Allura Xper FD series will provide an optimal workflow via the following workflow enhancers:

Complete automated 3D-RA process from 3D acquisition to 3D Viewing: no user interaction needed.

3D at Xper Module (option); With the Xper module the physician has all required 3D functionality at tableside. At the touch screen module functionality like rotating, panning, zooming, AVA, virtual stenting, 3D-APC and 3D Follow C-arc can be performed. With the mouse tablet all other functios can e performed so that there is is no need for the Physician to leave the examination room.

3D Automatic Position Control (3D-APC); When the optimal working position has been choosen via the Allura 3D-RA interventional tool, the C-arc will automatically steer to this position.

3D Follow C-arc; When the position of the C-arc (not using any X-ray) is changed, the 3D volume will automatically follow the position of the C-arc. This means the position of the C-arc (and therefore the 2D projection) and the 3D volume are always aligned. As last seen; when the user leaves the patient in the model and later selects that patient again, the Allura 3D-RA interventional tool will return to the image last used by the user.

Mouse over: When moving the mouse cursor over a button the mouse over text will show up to explain the function of that specific button.

4 Calibration

Allura 3D-RA calibrations are performed by Philips Healthcare Customer Support. Allura 3D-RA calibration data are stable over at least 6 months time.

5 Viewing

A Real Time user interface is available with 3D-RA, providing 3D object viewing in any space direction. A graphical display of (C-arm) stand position including angulation/rotation for any projection.

Philips' CRM (Contrast Resolution Management) Technology for a considerable increase in contrast resolution in all volumes.

Various Image Rendering possibilities: Volume/Surface Rendering, MIP, Endoscopy, SUM (pseudo x-ray image) Gradient rendering; the possibility to display the vessel structure transparently.

Cut-plane function to get a precise insight of the shape of the pathology

Orthoviewer providing a multi-planar visualization of objects using the different Image Rendering possibilities.

MPR (Multi-Planar Reformatting): enables visualization of the volume in all three standard projections (coronal, sagital and axial) Especially useful for optimal viewing of spine procedures (e.g.Vertebroplasty)

SpineView: special acquisition protocol for optimal viewing of the spine, especially osteoporotic vertebrae

CalciView: allows visualization of Hyper dense plaque in 3D, separately or in relation to the lumen.

5 different distance measurements calculated in the same volume, including "Quick measurement" feature

Volume calculation

Automated Vessel Analysis (AVA), provides information on vessel segment diameter, area and length with only three mouse-clicks. Endoscopic and cross sectional views are available.

Computer Assisted Aneurysm Analysis (CAAA), providing information on Aneurysms, like volume, neck size etc..

Catheter tip shape simulation, providing information on how to shape the catheter tip.

Virtual stenting; Ability to simulate a stent placement in a selected vessel segment for proper stent sizing. All relevant data of the simulated stent are displayed

Annotation: text can be added to a volume to capture comments.
Interpolative Zoom
Reconstructive Zooming Technique, 2 additional user defined reconstructions focused on the Volume Of Interest (VOI) using different cube size and voxel resolution.
Subtraction of reconstructed volumes, allowing to visualize vessels without embolization devices (stents, coils, clips,..) to assess the outcomes of treatment
Automatic Voxelshift: compensates for movement when rendering subtracted or superimposed volumes
Set the grey values WW/WL
Store/Recall of user defined projections.

6 Archiving
Transfer to:
Optional Hard Copy unit (DICOM Print)
Any optional DICOM compatible device (e.g. PACS/ViewForum/Xcelera), supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D
Any PC in a standard PC compatible format (JPEG,AVI)
One or multiple DVD's, CD-ROM(s) for easy archiving
Store a subset of exportable objects (snapshots and AVI Movies) to a USB removable memory device.

3D-RA on Xper Module

The 3D-RA on XPER MODULE integrates the off-line 3D-RA application in the Allura Xper system. It allows operation of 3D-RA with the Xper module in the examination room during an examination. Display of 3D-RA imaging in the examination room has to be arranged for the monitor ceiling suspension with an additional monitor or with MultiVision (sharing an existing monitor). Following 3D-RA functions are available on the Xper module:

- Image rotation
- •Image translation
- Start mouse mode
- Snapshot
- Segmentation (window-width/window-level control)
- 3D zoom control
- Store/recall views
- Recall Anterior-Posterior view
- Select 3D APC / Follow stand mode

3D Roadmap

3D Roadmap extends the capabilities of the integrated 3D product by providing a sustainable 3D roadmap to support interventional procedures. The 3D Roadmap option matches the real-time 2D fluoroscopy images with the 3D-RA reconstruction of the vessel tree. It provides a 3D real time insight of the advancement of the guide wire, catheter and coils through complex vessel structures. 3D roadmap has automatic motion compensation for the neuro runs. When the automatic motion compensation function is active, this functionality will constantly correct the motion artifacts which can be present in the 3D Roadmap image.
Image Acquisition
The 3D Roadmap is based on the visualization of the vessel tree out of 3D-RA The 3D Roadmap

is activated with one button touch at tableside (Xper Module). Select the 3D Roadmap function on the touch screen module, activate fluoroscopy and the 3D Roadmap is activated. The "live" 2D fluoroscopy image is overlaid with the 3D volume of the vessel tree and is automatically displayed on the 3D roadmap monitor in both the examination and control room.

Intuitive, fully controlled from tableside:
The bidirectional link between the X-ray system and the 3D Roadmap allows the user to select the optimal stand position for the procedure in two ways. 3D Automatic Position Control allows the gantry to automatically move to the best interventional projection as shown on the 3D Roadmap monitor. 3D Follow C-arc allows the 3D Roadmap to remain in sync with the 2D projection, automatically adjusting viewpoint as the gantry is repositioned

- Landmarking to adjust the intensity of the anatomical reference surrounding the vessels;
- 3D blending to fade in/out the 3D view;
- WW/WL settings to control the contrast/brightness;
- Store and review runs for reporting and archive purposes;
- Store snapshots and movies.

3D Roadmaps can be sent to:
Any optional DICOM compatible device (e.g. PACS/ViewForum/Xcelera), supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D
Any PC in a standard PC compatible format (JPEG,AVI)

And stored/archieved on
A PACS systems as DICOM Secondary Capture images or movies
USB removable memory device
One or multiple DVD's, CD-ROM(s) for easy archiving
Hard copy via the (DICOM Print) protocol

Clinical Education Program for Vessel Navigation:

Philips Imaging Systems Clinical Education Specialist will provide twenty-four (24) hours of education for up to four (4) students, as selected by customer, including technologists from weekend/night shifts as necessary.   CEU credits are not available for this portion of training. Please refer to guidelines for more information. Note: Site must be patient ready.   Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref#296276-20150820

Line #	Description	Qty

Set of flexible x-ray filters to provide an uniform density in angiographic examinations of the lower peripheral area.
Comprising:
· one central filter, at the top edge provided with sizing markers at every 5 cm, length : 1 m
· two side filters, length: 1 m

15   **Pivot for table base.**   **1**

For angiographic- and interventional procedures of the upper peripherals.
Provides improved table access for patient transfer.
Allows pivoting of the table base around its vertical axes.
Pivot range from -90 degrees to + 180 degrees (or -180 to +90 degrees) with locked positions on 0, -13/+13 (facilitating arm-angiography) and -90/+90 and 180 degrees.

Comprising:

- pivot device with graduated scale to be mounted on the universal floor plate of the table.

Compatible with Xper Table

16   **Dicom Print compose**   **1**

• Print images from X-ray system

Share and archive hardcopies of images
To print examination images from the X-ray system, the DICOM Print option can be used to connect the X-ray system to any DICOM printer. This is an automated printing protocol. The option provides Print Manual Overrides, Print Job submission, and Print Job management.

17   **Bracket f Radiation Shield(ER)**   **1**

• Easy positioning of radiation shield
Easy positioning with ceiling mounted radiation shield
This ceiling bracket allows you to mount a radiation shield via the boom on the ceiling for easy positioning where needed.

18   **shoulder support board**   **1**

• Enhance patient comfort during catheter usage
Enhance patient comfort during catheter usage
To support the patient's arm when a catheter is used through the pulse, the pulse catheter arm support can be attached to the tabletop. It also provides room for placing catheterization instruments. The support is a flat radio translucent board that is placed under the patient, and part of it protrudes to the left or right side of the tabletop to support the arm.
Specifications
Size: 100 x 85 cm
Material: carbon-fiber reinforced material

19   **MR/CT Roadmap**   **1**

Philips MR-CT Roadmap tool allows re-use of the vessel tree image from previously acquired MRA (MR angiography) or CTA (CT angiography) scans for endovascular navigation.

Key benefits
• Roadmap on previously acquired MR and CT angiography datasets, reducing the need for additional X-ray dose and contrast medium
• Reduce treatment risks for patients with renal insufficiency or young patients who are considered X-ray dose sensitive

• Perform procedures with a high level of precision thanks to real-time compensation for gantry and table movement

Accurate 3D guidance for complex interventions

Patients undergoing complex vascular interventions often receive high-resolution CT or MR scans in the diagnostic phase. To manage patients' exposure to additional X-ray dose and contrast medium during the intervention, Philips MR-CT Roadmap tool allows re-use of the vessel tree image from previously acquired MRA (MR angiography) or CTA (CT angiography) scans for endovascular navigation.

Specifications

MR/CT Roadmap extends the capabilities of the integrated 3D product by providing a sustainable 3D roadmap based on previous acquired CT or MR scans to support interventional procedures.

Image Acquisition

A previously acquired CT or MR scan can be imported into the system and matched with a low dose 3D-RA or XperCT scan. The MR/CT Roadmap is activated with one button touch at tableside on the touch screen module. The "live" 2D fluoroscopy image is overlaid with the MR/CT volume presented in 2D or 3D and is automatically displayed on the roadmap monitor in both the examination room and control room.

Intuitive, fully controlled from tableside:

The bidirectional link between the X-ray system and the MR/CT Roadmap allows the user to select the stand position for the procedure in two ways. 3D Automatic Position Control allows the gantry to automatically move to the best interventional projection as shown on the MR/CT Roadmap monitor. 3D Follow C-arc allows the MR/CT Roadmap to remain in sync with the 2D projection, automatically adjusting viewpoint as the gantry is repositioned.

• Easy 2 step registration of the MR/ CT volumes
• Landmarking to adjust the intensity of the anatomical reference surrounding the vessels and tissue
• 2D and 3D blending to fade in/out the 2D or 3D view
• WW/WL settings to control the contrast/brightness
• Store and review runs for reporting and archive purposes
• Store snapshots and movies

MR/CT Roadmap data can be exported to:
• Any optional DICOM compatible device(e.g. PACS/Printer), supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D
• Support archive on one or multiple DVD's, CD-ROM(s)
• Image transfer to a standard PC compatible format (JPEG, AVI)
• Store a subset of exportable objects (snapshots and AVI Movies) to a USB device.

20	**FD Rotational Angio**	**1**

Rotational angiography provides real-time 3D impressions of complex vasculature and coronary artery tree. It acquires multiple projections with just one contrast injection via a fast rotational scan of the region of interest.

Rotational Angiograpy can be used during screening procedures to quickly determine the optimal projection for the study as the angle (rotation/angulation) of the projection is indicated on each image.

Compared with traditional angiography, Rotational Angiography can save considerable time, dose and contrast, while providing image detail required for diagnostic and therapeutic decisions.

A rotational scan is possible both with the Allura Xper systems in the side position (ceiling mounted systems) and in the head position, providing the flexibility to perform procedures virtually from head to toe.

C-arm in side position:

- Max. rotation Speed: 30 degrees/s
- Max. rotation Angle: 180 degrees

C-arm in head position:

- Max. rotation Speed: 55 degrees/s
- Max. rotation Angle: 305 degrees

Max. Frame speeds are given by the framespeed specifications of the system configuration.

The speed and range of rotation are the highest available (see table). The very high speed allows using less contrast, whereas the very wide rotation range provides a complete evaluation of the anatomy.

A contrast run can be followed up with a mask run, to allow image/run subtraction.

The stand is designed for a very high mechanical stability. It offers precise positioning and high reproducibility, assuring you of high quality images and excellent subtraction studies.

Operation of Rotational Angiograpy is extremely easy. The procedure is selected, set up and executed virtually in a matter of seconds, supporting the highest patient throughput.
A set of dedicated acquisition programs is available on the Xper Module and can be selected at the touch of a button. The rotation end- and start-positions are easily selected. The procedure is controlled from the exposure hand- or footswitch.

21	**Table top brake kit**	1

• Prevents tabletop movement when power goes off
Prevents tabletop from floating during power off situation
The tabletop brake kit prevents the tabletop from floating in case of a power off situation.
A friction brake is applied to stop the tabletop from moving longitudinally or laterally.

22	**table tilt option**	1

Table tilt option provides precise imaging of contrast medium, blood, or objects in the body.

Key benefits
• Tilts the table to support gravity oriented and puncture procedures
• Keeps the region of interest in the isocenter of rotation and angulation
• Allows more precise imaging of contrast medium, blood, or objects in the body

Precise imaging during gravity oriented and puncture procedures
To obtain high quality results and avoid re-takes during gravity oriented or puncture procedures, it's important to keep the region of interest centered at all times. The tilt option allows you to tilt the

table. As the table tilts, the X-ray beam automatically adapts to the movement to keep the region of interest in the isocenter of rotation and angulation of the stand. As a result, your region of interest always remains centered to allow more precise imaging of contrast medium, blood, or objects in the body.

The table floats even when tilted, and the region of interest can be followed by panning the tabletop. When combined with the Bolus Chase option, the table tilt option enables phlebography to be performed with a head-up tilted patient.

Specifications
• Motorized table height from 78.5 - 103.5 cm
• Maximum tilt range: -17 degrees (head down) to +17 degrees (head up).
• Tilt speed: 2 degrees/sec
• Automatic safeguarding system with manual override
• Panning range in tilted plane: equal to the standard tabletop specifications (longitudinal 120cm, lateral 36cm)
• Easy to use controls

23 **DVD writer** **1**

Key benefits
• Store images and information on DVDs for easy sharing

Store images and information on DVDs for easy sharing
To provide flexible storage options, a DVD writer is available with the Philips X-ray system. Procedural images and information can be stored on DVDs and used for archiving, training and presentations.
Specifications
Export and import of X-ray images and X-ray runs to DVD and/or from DVD

24 **Laser Option** **1**

The XperGuide laser option is a positioning aid designed to simplify manual effort during percutaneous interventional procedures.

Key benefits
• Illuminates the needle entry point on the skin
• Allows you to concentrate on the Progress View without switching back to the Entry View
• Provides a clamp to assist in holding the needle in the correction position and orientation

Simplifying positioning during needle interventions
Performing image-guided needle procedures requires the utmost concentration. The XperGuide laser option is a positioning aid designed to simplify manual effort during percutaneous interventional procedures. The laser tool is attached to the patient table and marks the needle entry point on the skin. It also provides a clamp to assist in holding the needle in the correct position and orientation. Using the laser tool with XperGuide allows you to concentrate on the Progress View without switching back to the Entry View.
Specifications
The laser tool has an LED to indicate its status: when the LED is lit, the laser is active.
Laser tool components:
• Laser tool
• Laser tool holder and table clamp for fixation to the patient table
• Laser tool charger

25 **Cradle extension** **1**

• Moves the tabletop in a cradle motion from side to side to support surgical and puncture procedures
• Improves access to patients
• Allows precise imaging of contrast medium or blood

Precise imaging during surgery and puncture procedures
To obtain high quality imaging results and help in avoiding re-takes during surgical or puncture procedures, it can be useful to swing the tabletop from side to side in a cradle movement. This extension moves the tabletop in a cradle motion to improve access to patients. It also allows precise imaging of contrast medium or blood.

26	FlexVision XL HD + 2 LCD's	1

FlexVision XL HD is an integrated viewing solution designed to give you full control over your viewing environment which brings High Definition viewing.
This FlexVision XL HD is delivered with two 27 inch high brightness color medical grade LCD monitors. The monitors can be mounted on top side or on rear side of the MCS.

Key benefits
• Easily access multiple, up to 8, video inputs (including third party systems) video inputs to inform decision making during procedures
• Create custom display templates to support diverse procedures
• The screen layout of the FlexVision XL HD can also be changed from the control room
• Enlarge images to reveal more details and support comfortable working positions

Diagnostic information easily made available at table side
In today's interventional setting, as you perform more complex procedures with smaller devices in complex anatomy, you rely on various types of diagnostic information to guide you. To inform decision making in the exam room, Philips offers an advanced digital workspace called FlexVision HD. You can display multiple images in a variety of custom layouts on a large, high-definition LCD screen. Zoom in and out to enhance fine details, while maintaining an overview of all information. Create custom display templates for specific procedures/physician preferences to easily support diverse procedures.

Specifications
FlexVision XL HD offers:
• Native resolution of FD20 can be displayed.
• Sharp images at full size without zoom
• High Definition display at native resolution for ultimate detail
• Up to 2k*2k image display fully integrated
• Enhanced small vessel visualization

1. DVI video composition unit.
The DVI video composition unit allows the user to direct and switch the video output of all connected medical equipment to specific sub windows of the Philips 58-inch color LCD with LED backlight in the Examination Room.
• The DVI video composition unit is operated from the touch screen module.
• The DVI video composition unit supports a wide variety of display formats (up to 1920x1200)
• Up to 11 external inputs are connected to the DVI video composition unit via wall connection box or boxes.

2. Medical grade, high resolution color LCD in the Examination Room
This display supports the image quality requirements for monochrome X-ray images as well as color images and replaces all displays normally delivered with the system for the Examination Room.
Main characteristics are:
- 58-inch, 8 Megapixel color LCD
- Native resolution: 3840x2160

Line #	Description	Qty

- Brightness: Max: 700 Cd/m2 (typical) stabilized: 400 Cd/m2
- Contrast ratio: 1:4000 (typical)
- Wide viewing angle (approx. 176 degrees)
- Constant brightness stabilization control
- Lookup tables for gray-scale, color and DICOM transfer function
- Full protective screen Ingress Protection: IP-21

3. Large color LCD control (touch screen module)
• Enlarge information at any stage during the case via the touch screen module in the Examination Room or Control Room.
• Select viewing lay-outs via the touch screen module in the Examination Room.
• Create new layouts by matching inputs to desired locations on preset templates.
• Adjust the screen layout during the procedure without going into configuration
• 20 layouts; each layout is customizable, size of viewports can be customized by end user X-ray status area visible with all X-ray details

4. Monitor ceiling suspension
Monitor ceiling suspension for use in the Examination Room carries the 58-inch color LCD, providing highly flexible viewing capabilities. The monitor ceiling suspension is height-adjustable and moveable along ceiling rails. It can be positioned on either side of the table.

5. Snapshot
The snapshot function allows the user to store/save a screen-capture of any image on the FlexVision HD as a photo image to the current acquisition patient study.

27   **storage extension**   **1**

Extends image storage capacity on your X-ray system

As imaging data becomes larger, you can quickly reach the limit of the storage capacity on your interventional X-ray system. The Storage extension extends the storage capacity of your interventional X-ray system.

Specifications

By default 50.000 images are available, this option will give 100.000 images (this is for 1K2 image size).

28   **Dripstand**   **1**

• Support infusion bags during examinations

Support infusion bags during examinations

The drip stand is provided to hold two infusion bags next to the examination table for patients or examinations that require fluids. The drip stand can be attached to the rail accessory clamp and adjusted to the necessary height.

29   **IW Hardware**   **1**

Key benefits
• Facilitates the interventional tools and multimodality viewing in exam room and control room
• Supports import and viewing of DICOM compatible data from CT and MR imaging modalities

View multimodality images in exam room and control room
Images from a variety of sources are being increasingly used during interventions for a variety of Live Image Guidance tools. The Interventional Tools Hardware option provides the hardware for our interventional tools. It enables DICOM compatible data from other imaging modalities to be imported and viewed in the exam room and control room. To support fast results, a real-time digital image link is provided between the Interventional Hardware workstation and the X-ray system.

Specifications
The Interventional hardware is the hardware for the 3D interventional tools that includes Real Time Link. It enables import and viewing of DICOM compatible data from other imaging modalities. The Interventional Hardware comprises at least:

FD Calibration Tool Kit for 3D-RA

30   **CO2 View Trace Software**   **1**
Software package which enables tracing (stacking) of images acquired with CO2 injections. This function can be used during postprocessing next to view trace of images acquired with iodine injection.

31   **Neuro Wedge**   **1**
• Enhance neuro image quality
Enhance neuro image quality
The neuro wedge is used to position the head in the iso center of the imaging field during neuro radiology examinations.

32   **OncoSuite complete**   **1**
OncoSuite provides a complete solution for Tumor Embolization and Percutaneous Ablation procedures in Interventional Oncology. Its 3D Live Image Guidance is based on the superior visualization with XperCT Dual, tumor embolization with EmboGuide and its percutaneous Ablation with XperGuide with the Ablation option.

OncoSuite consists of XperCT Dual, EmboGuide and XperGuide with Ablation option.

XperCT Dual extends the capabilities of the interventional suite offering CT like imaging to visualize bone, soft tissue and vessels in case of contrast enhanced acquisition. XperCT Dual protocols are available covering routine procedures such as biopsies and drainages but also advanced procedures such as abdominal oncological imaging up to neuro high resolution stenting. All protocols can be selected at the tableside via the XperModule.

The DualPhase dual view functionality allows the simultaneous visualization of two 3D datasets acquired at different times of the procedure such as the arterial and post-arterial contrast enhancement in oncologic liver imaging. In this DualView, XperCT Dual allows the segmentation of multiple lesions at the same time in the viewed datasets.

XperCT Dual acquires up to 60 frames/sec. (frame rate extension to 60frames/sec is included) and supports fast abdominal protocols with 5 to 10 second acquisition time for Allura release prior to 8.2 and even 5 to 8 second acquisition times for Allura release 8.2 or higher, thereby minimizing respiratory artifacts. The XperCT volume is displayed automatically within 8 to 15 seconds after acquisition. No user interaction is required.

XperCT Dual includes Metal Artifact Reduction to reduce the artifacts caused by metal presence in the region of interest. In case the original XperCT shows metal artifacts, the interventional radiologist can perform a second reconstruction and select for Metal Artifact Reduction, which will remove the artifacts caused by the metal present. The most typical examples of metal presence

are: metal implants, coils or stents with stainless steel structures. Moreover, BMI Noise Reduction is included to reduce the noise caused by large size patients.

Note: BMI Noise Reduction is only available when Abdominal XperCT runs are selected

The XperCT volume can be viewed in the control room and in the examination room. The viewing package comprises:

- 3D volume viewing in any desired orientation
- Slice viewing in any desired orientation
- Slice viewing at any slice thickness with a minimum of 0.5 mm
- Five distance measurements calculated in the same volume, including "Quick measurement" feature
- Cut-plane functionality to provide precise insight into anatomical structure
- Unique high-resolution reconstructive zoom technique
- Graphical display of stand position including rotation and angulation parameters
- Contrast and brightness control
- Contrast resolution 5-10 Hu
- Spatial resolution of the initial reconstruction: 10 lp/mm
- Contrast range -1000 to 2000 Hu
- High resolution imaging mode produces
- 512x512x512 volume rendered reconstructions
- XperCT Dual can be controlled via the Xper module and the mouse at tableside.

The XperCT volume can be matched with (when additional options are available) Allura 3D-RA and pre acquired CT, PET/CT or MR volumes. This view allows combining multiple images from different modalities in order to provide additional anatomical insight. This multimodality volume can be viewed with the following functionalities:

- Registration of the two volumes from the same patient
- The resulting volume can be viewed with complete 3D-RA viewing functionality
- The XperCT slice can be overlaid onto the 3D vessel for better assessment of the region of interest
- Three different contrast rendering options to allow optimal viewing of the 3D vessel in the soft tissue structure
- (128x128x128, 256x256x256, 384x384x384 and 512x512x512 volumes)
- Movie clip recording functionality (AVI) to capture dynamic views
- 3D automatic position control at tableside: When an optimal working position is selected from the XperCT volume the C-arc steers itself to the selected position
- 3D Follow C-arc at tableside: When selected, the XperCT volume automatically follows the position of the C-arc.
- XperCT data and 3D-RA with XperCT Dual overlay is stored in the same patient file as all other patient related data. All this data can be reviewed at any time

XperCT data can be sent to:

- Any optional DICOM compatible device (e.g. PACS/ViewForum/Xcelera), supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D
- Any PC in a standard PC compatible format (JPEG,AVI)
  XperCT datasets can be stored/achieved on:
  - A PACS systems as DICOM Secondary Capture images or movies
  - USB removable memory device
  - One or multiple DVD's, CD-ROM(s) for easy archiving
  - Hard copy via the (DICOM Print) protocol

EmboGuide provides workflow-guided Embolization support in three steps. The first step comprises of the Identification and Segmentation of multiple lesions. Secondly, the feeders of the segmented lesions are identified. The Automatic feeder detection function supports the user with this. Finally, Live Image Guidance is used in order to reach each of the identified feeders for a selective or super-selective Embolization.

The essential components of EmboGuide are:

- 3D lesion segmentation tool for 3D target(s) identification and volume measurement.
- Workflow-driven planning tool with automated feeding vessel detection and marking.
- 3D roadmap navigation with lesion and feeding paths overlay.

Depending on Allura configurations, XperCT Dual allows obtaining two manual forward scans or two automatic rotational scans with a user-defined delay between them (automatic rotational scans only for Allura release 8.2 or higher). In case of two automatic rotational scans, the first scan is performed in a forward direction while the second one is performed in reverse direction (DualPhase wiper rotation). In both configurations, the first phase can be used to show early tumor contrast uptake and its feeding vessels, while the second scan can be used to depict the delayed contrast uptake in lesion, determining its vascularity and perfusion. Optimal automatic high volume reconstruction is in this respect is essential to secure appropriate feeding vessel detection in the first phase and a good soft-tissue contrast in the second phase. The 3D lesion segmentation is an interactive user-guided tool that allows isolating regions of interest in a 3D volume using image-specific features. The tool can be used for user-guided segmentation of lesions from MR, CT or XperCT volumes. A workflow-driven planning tool, building on already available vessel detection and volume cut features, can then be used to highlight the feeding vessels to the lesion. Real-time overlay and registration of the 3D volume on live 2D X-ray images from the Allura X-ray system of the same anatomy can be used as additional 3D image guidance to support the navigation of the device/catheter. Planning data, like the earlier annotated feeding vessels and/or 3D landmarks can be displayed on 2D-3D fused images as supporting information.

EmboGuide provides the following functions:

- Automatic Feeder Detection; supports the user in analyzing the vasculature of lesions by giving the initial suggestions of the feeding vessels of the segmented lesions. The detected feeding vessels will be annotated and added to the planning.
- Manually add and/or remove feeding vessels; after running the automatic feeder detection function, the user can verify and refine the planning by manually adding and/or removing feeding vessels.
- Follow Feeder; for verification, the user may use the Follow Feeder function. This function allows the user to trace the path of a single annotated feeding vessel to verify whether it traces into a targeted lesion.

- 3D Landmarks; landmarks can be put on the 3D volume as additional information to support with the navigation of the catheter.
- Live 3D Image Guidance; real-time overlay and registration of the 3D volume on the live 2D X-ray images from the Allura X-ray system of the same anatomy, can provide additional 3D image guidance to help the user with navigating the device/catheter to the embolization target.
- Storage of the live 2D-3D overlay runs; the real-time overlay of the 3D volume with the live 2D X-ray images from the Allura X-ray system can be recorded and stored for reviewing at any time.
- Table-side control; to provide efficient work-flow during the interventional procedures, the most frequently used functions can be controlled from table-side.

Image data for EmboGuide is stored together with the EmboGuide movies and snapshots and can be sent to any optional DICOM compatible device (e.g. PACS/IntelliSpace Portal/Xcelera). Supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D and any PC in a standard PC compatible format (JPEG,AVI). All this data can be reviewed at any time.

EmboGuide movies and snapshots can be stored/achieved on:

- A PACS systems as DICOM Secondary Capture images or movies.
- USB removable memory device.
- One or multiple DVD's, CD-ROM(s) for easy archiving.
- Hard copy via the (DICOM Print) protocol.

OncoSuite Ablation allows planning of the ablation zone with a high degree of accuracy using conventional methods. XperGuide ablation software helps to plan and guide the specific ablation zones and distance between the ablation needles in 3D based on the manufacturer's specifications of each needle. OncoSuite Ablation shows the isotherm of each needle on an XperCT overlay or on a pre-acquired MR, CT or PET/CT volume. OncoSuite Ablation assists clinicians in planning the optimal placement of the ablation needle to cover the targeted lesion. The needle path can be planned by drawing it or by defining entry and target locations on XperCT, MR, CT or PET/CT slices. By allowing the precise planning of multiple needles, XperGuide's ablation software assists clinicians in treating large tumors and thereby helping to prevent re-do.

OncoSuite Ablation consists of both XperGuide and the XperGuide Ablation option.

XperGuide enables real-time needle guidance in the angio suite. Virtual needle paths are created by XperCT Dual data and on overlays of previous acquired MR, CT, or PET/CT datasets. In order to visualize the actual needle path versus the virtual path that is planned upfront, XperGuide offers the possibility to match real-time 2D fluoroscopy images with 3D volume of XperCT Dual, CT, PET/CT or MR datasets. A wide range of gantry projections can be used to define the needle path. This volumetric dataset can be viewed in any slice direction providing optimal sight.
Path planning in XperGuide can be done by:

- Drawing a virtual needle path on an XperCT, CT, PET/CT or MR slice
- Defining entry and target points on different XperCT Dual, MR, CT or PET/CT slices
- Defining a help line on a 3D volume XperGuide automatically calculates the optimal gantry projections for the path and transfers them to the planning to draw the needle path. The calculated virtual needle paths can be viewed on the XperCT Dual, MR, CT or PET/CT slices, to verify if this path is feasible

XperGuide supports planning of multiple needle trajectories. During the needle procedure, XperGuide is fully controlled at tableside. When XperGuide is active, guidance is automatically active when the fluoroscopy pedal is pressed. The live 2D image is projected over the XperCT Dual, MR, CT or PET/CT volume. The gantry can be positioned in the calculated gantry positions or controlled manually. The XperGuide images (live 2D fluoroscopy projected over the XperCT Dual, MR, CT or PET/CT volume) will follow the gantry projections.

At table side, XperGuide adapts in real-time to the following parameters:

- Changes in the angulation of the C-arm
- Changes in the rotation of the C-arm
- Changes in the field of view
- Changes in the source image distance

XperGuide data, like XperGuide movies and snapshots, can be exported to any optional DICOM compatible device (e.g. PACS/ViewForum/Xcelera). Supported are DICOM XA, DICOM SC, DICOM CT and DICOM 3D and any PC in a standard PC compatible format (JPEG,AVI). XperGuide movies and snapshots can be stored/achieved on:

- A PACS systems as DICOM Secondary Capture images or movies
- USB removable memory device
- One or multiple DVD's, CD-ROM(s) for easy archiving
- Hard copy via the (DICOM Print) protocol

XperGuide Ablation is an extension to the XperGuide software to facilitate the planning of tumor ablation procedures. It supports all percutaneous ablation techniques (RF, microwave and cryo-ablation) by displaying the isotherm of the chosen ablation needle. It allows the visualization of multiple needles by entering their thermal characteristics, and the assessment of their combined impact in the ablation zone. A virtual ablation needle with its thermal characteristics is displayed on a 3 dimensional XperCT volume or previously acquired CT, MR or PET/CT data to verify optimal positioning of the needle and obtain total tumor coverage. The thermal characteristics of each needle consist of the width, breadth and front of its ablation zones. Per needle up to three ablation zones of different isotherms can be defined. XperGuide Ablation allows to plan and store up to 60 different types of thermal needle characteristics simultaneously.

All thermal characteristics can be stored and transferred to other Allura systems. After the needle planning is performed, the 2D fluoroscopy overlay on the 3D volume allows real time needle guidance along the planned trajectory on XperCT, MR, CT and PET/CT datasets. During live needle guidance it is possible to adjust the ablation transparency and modify the previous plan. After the needle(s) are positioned, it's possible to control the effective ablation target with the previous plan.

Clinical Education Package for OncoSuite Complete:

XperCT Handover OnSite Education: Philips Education Specialists will provide eight (08) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must

be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

iXR EmboGuide OnSite Education: Philips Education Specialists will provide eight (8) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

iXR XperGuide Onco Ablation OnSite Education: Philips Education Specialists will provide eight (8) hours of education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref#292335296250296249-20151215

33	**XperCT Open and Closed**	**1**

For Philips Azurion Interventional X-ray suites, Open trajectory function is available in propeller mode in addition to the current standard trajectory.

Specifications

Open Trajectory provides 3D rotational acquisitions with start and stop positions of +55° to -185° respectively. This protocol opens the arc to the left side of the patient allowing for a wider translation of the angiographic table towards this direction; thereby shifting the isocenter of the C-arm to the right lateral side of the patient. This enables visualizing off-centered regions of interest (such as the periphery of the liver) in a single sweep. In this function, the data is acquired at the same frame rate as XperCT Dual (60 frames/sec). With 'XperCT Open and Closed' functionality, customers can continue to retain the current standard closed trajectory protocols. Therefore, customers will be able to choose either of the trajectories in propeller mode during the procedure as per their preference.

34	**DoseAware Bundle**	**1**

DoseAware is a unique solution providing staff working in an X-Ray environment with direct, real time dose feedback, enabling them to optimize their behaviour and reduce exposure to scattered dose. The DoseAware bundle comprises:

- 1 BaseStation Package
- 10 PDMs
- DoseManager
- 2 PDM racks.

Base Station Package

The Base Station is the heart of the DoseAware system. It offers Online View, which displays real time dose rate and immediate dose data for any Personal Dose Meter (PDM) in range. The Walk-Up View enables easy access to personal dose history and PDM settings.

The Base Station has a touch screen interface and wireless communication with the PDM. The

PDM dose information is stored within the Base Station and can be retrieved by the DoseAware Dose Manager software via a standard network interface to complete the DoseAware system with archiving and reporting functions.

The Base Station package includes also:

- a cradle and the DoseView software package that can be installed on a local PC (not included), which has Windows XP or Vista as operating system.
- Mounting material for the Base Station, facilitating mounting on a wall or on a Philips Monitor Ceiling Suspension or a Philips mobile C-arm system.

10 Personal Dose Meters

The Personal Dose Meter (PDM) is a small and easy to wear active X-ray dose meter intended to measure and store received X-ray dose of staff, present in an X-ray room during radiation. The PDM has build-in radio-frequency wireless communication (868.3 Mhz for Europe version, 915 Mhz for USA version) to connect to the DoseAware Base Station for real time dose-rate indication and has a long battery life for maintenance-free usage. In addition it can be personalized to increase interest and awareness. The PDM not only records warning level profiles every second for a total of 3600 sec (cyclic overwritten), but also stores accumulated dose data every hour for maximum 5 years. A clip and a lanyard holder are included to facilitate easy wearing.

The PDM can be configured via the cradle, DoseView, and Dose Manager Software.

Dose Manager Package

The Dose Manager is a software program that serves as archive and reporting facility for all dose data of the DoseAware system. It allows tracking of multiple PDM's at a location.

Core functionality is:

- Store and manage dose history for multiple PDM's
- Collect all dose history from connected Base Stations via the network
- Browse dose history of PDM's as graph or table
- Export dose data for personal analysis with other software tools, like Windows Excel
- Create and print reports of dose history

35   **Personal Dose Meter (1 piece)**   **10**

Personal Dose Meter.

The Personal Dose Meter (PDM) is a small and easy to wear active Xray dose meter intended to measure and store received Xray dose of staff, present in an Xray room during radiation. The PDM has build-in wireless communication to connect to the DoseAware Base Station for real time dose-rate indication and has a long battery life for maintenance-free usage. In addition it can be personalized to increase interest and awareness. The PDM not only records warning level profiles every second for a total of 3600 sec (cyclic overwritten), but also stores accumulated dose data every hour for maximum 5 years. A clip and a lanyard holder are included to facilitate easy wearing.

The PDM can be configured via the cradle and DoseView (and the optional Dose Manager) software for the following attributes:

- Full name (max 40 bytes)

- Display user name (max 16 bytes)
- User group from list
- PDM ID (max 16 characters)
- Position on body
- Date & time = Real Time Clock, synchronized with local time, and being the clock master for the DoseAware system. With each
- connection PDM => Base Station => Dose Manager the timing is synchronized automatically.
- Date of PDM assignment to a person
- Dose history reset
- Sleep mode On/Off
- Annual dose limit

The PDM has following specifications:

- Operational unit: HP10
- Dose range: 1µSv – 10 Sv
- Dose resolution: 1 µSv
- Dose uncertainty: 5% or 1 µSv
- Dose rate range: 10 µSv/hr - 50 mSv/hr
-                             (3 nSv/s - 15 µSv/s)
- Response time: < 4 s, 40 µSv/hr – 100 µSv/hr; < 1 s above 100 µSv/hr
- Energy dependency X-, Gamma-rays: N40-N160 (33keV – 118 keV)
- Average battery life: 3 – 5 years, depending on daily use
- Weight: 30 gr
- Dimensions: 45 x 45 x 10 mm (w x h x d)
- Personalization: 8 inlays with colour
- Communication radio: Center frequency 868.3 Mhz for Europe version
                              915   Mhz for USA version

36   **Full Load Remote UPS**   **1**

MGE Galaxy 5000 80 kVA Full Load – 40kW UPS with remote capability. Includes top feed cabinet and optional side panels, ISX0001369526 G5TUPSU80KPAdjacent MGE Galaxy 5000 Battery Cabinet with one full string of batteries and standard Galaxy 5000 Adjacent battery Temp sensor.
High Voltage 6 Alarm Relays Card
MGE GALAXY 5000 Remote Alarm Status Panel
MGE SNMP/Web Communication Card
Top Feed Auxiliary Cabinet
In the event of a power loss the UPS provides emergency power to allow system function and full X-Ray exposure and fluoroscopy for up to 15 minutes.